

# PATENT ABSTRACTS OF JAPAN

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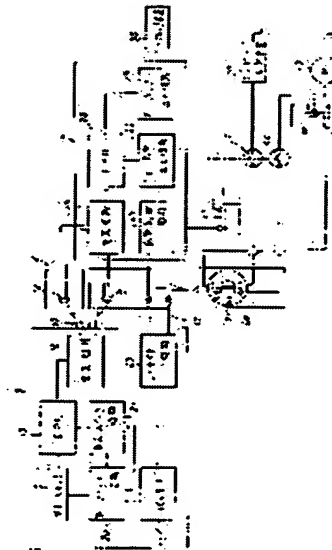
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**(54) BURGLAR-PROOF DEVICE**

(57)Abstract:

**PURPOSE:** To aim at saving a power during power charge for a key by charging power to a battery on the key side from a charge circuit on the switch side due to the contact which is established when the key is inserted into the switch, and by inhibiting a light emitting element from transmitting a signal at that time, excepting transmission during initial predetermined cycles.

**CONSTITUTION:** When a key is inserted into an ignition switch 2, a contact 11 makes contact with the associated contact 14, and a battery 22 on the key side is charged by a charge circuit 24 on the switch side through the contacts 11, 14 and a contact circuit 23. In this phase, when the key is inserted into an ignition key switch, a light emitting element is prevented from transmitting a signal excepting signal transmission during first predetermined number cycles. During a battery on the key side having a signal transmitting function may be charged under drive of an engine, and it is possible to prevent a battery from being consumed uselessly.



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CLAIMS

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[Claim(s)]

[Claim 1] The transponder component (6) which memorized the ID code to the internal memory, and a lock means to lock the closing motion section of a pachinko game base electrically (12 13), A reading means to read the ID code which accesses with said transponder component (6) and is memorized by the transponder component (6) (5), A collating means to collate with the ID code for collating the ID code read by the aforementioned reading means (5) (15), Locking equipment of the pachinko game base characterized by having a unlocking signal output means (15) to output the signal which unlocks said lock means (12 13) when said read ID code is in agreement with the ID code for said collating as a result of collating by said collating means (15).

[Claim 2] Said transponder component (6) is locking equipment of the pachinko game base according to claim 1 characterized by being embedded to the key (7) inserted in a keyhole (1).

[Claim 3] Said transponder component (6) is locking equipment of the pachinko game base according to claim 1 characterized by connecting with the key (7) inserted in a keyhole (1).

[Claim 4] Locking equipment of the pachinko game base according to claim 1 characterized by having a selection means (11) to choose two or more lock means (12 13) to lock electrically two or more closing motion sections concerned, respectively, and the lock means set as the object of unlocking out of two or more lock means (12 13) concerned when a pachinko game base has two or more closing motion sections.

[Claim 5] Said two or more lock means (12 13) are locking equipment of the pachinko game base according to claim 4 characterized by being a 1st lock means (12) to lock electrically the face of a board (2) of a pachinko game base, and a 2nd lock means (13) to lock the frame surface (3) of a pachinko game base electrically.

[Claim 6] Said transponder component (6) is locking equipment of the pachinko game base according to claim 5 characterized by being embedded to the key (7) inserted in a keyhole (1), and said selection means (11) choosing said 1st lock means (12) or said 2nd lock means (13), respectively according to the direction to which the key (7) inserted in the keyhole (1) was turned.

[Claim 7] Said transponder component (6) is locking equipment of the pachinko game base according to claim 5 characterized by connecting with the key (7) inserted in a keyhole (1), and said selection means (11) choosing said 1st lock means (12) or said 2nd lock means (13), respectively according to the direction to which the key (7) inserted in the keyhole (1) was turned.

[Claim 8] The aforementioned reading means (5) is locking equipment of claims 2, 3, and 6 which are equipped with the antenna (5) and characterized by forming the antenna (5) concerned in the perimeter of said keyhole (1) at it and one, or the pachinko game base of seven publications.

[Claim 9] The aforementioned reading means (5) is locking equipment of claims 2, 3, and 6 to which it has the antenna (5) and the antenna (5) concerned is characterized by being installed in said transponder component (6) and the location which can be accessed in the condition that said key (7) was inserted in said keyhole (1), or the pachinko game base of seven publications.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the locking equipment of a pachinko game base.

[0002]

[Description of the Prior Art] As a pachinko game base, there is a pachinko base as shown in drawing 5 . This pachinko base equips the suitable location with the keyhole 1, and if a key is inserted and turned to this keyhole 1, it is constituted so that the face of a board (glass side) 2 and the frame surface (whole game base surface) 3 of a pachinko base may open alternatively, respectively. For example, a key is inserted in a keyhole 1, if it turns to the right, it will unlock the lock for face-of-a-board 2, and the face of a board 2 will open, a key is inserted in a keyhole 1, if it turns to the left, it will unlock the lock for frame surface 3, and a frame surface 3 will open. The configurations of a keyhole 1 usually differ for every suitable number, respectively. In addition, a sign "4" is a handle among this drawing.

[0003]

[Problem(s) to be Solved by the Invention] However, if it is in the locking equipment of such a conventional pachinko base, since it unlocks a lock only by only inserting and turning a key to a keyhole 1, if the key suitable for the configuration of a keyhole 1 is reproduced (copy), the face of a board 2 and the frame surface 3 of a pachinko base can be opened unjustly easily. Since the class of keyhole 1 makes comparatively easy usually so many [ as mentioned above ] copies of a key, it can be said that a possibility that a pachinko base can open unjustly is comparatively large. In order for a pachinko base to prevent that it can open unjustly and to raise that safety, it is possible to make [ many ] the pattern of the configuration of a keyhole 1, for example, to change the configuration of a keyhole 1 for each pachinko base of every, but since the number of a key increases and a salesclerk has to stop having to walk around with many keys in this case, it is inconvenient on management. Today's pachinko base has a thing in use using a microcomputer, and since the probability of winning a prize of a pachinko base etc. is easily changeable only by exchanging ROM (memory) built in a microcomputer, it has been a very important technical problem to prevent the malfeasance to a pachinko base.

[0004] This invention is made in view of the trouble of such a conventional technique, and aims at offering the locking equipment of the pachinko game base where a pachinko game base can prevent effectively that it can open unjustly.

[0005]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, invention according to claim 1 The transponder component which memorized the ID code to the internal memory, and a lock means to lock the closing motion section of a pachinko game base electrically, A reading means to read the ID code which accesses with said transponder component and is memorized by the transponder component, When said read ID code is in agreement with the ID code for said collating as a result of collating by collating means to collate with the ID code for collating the ID code read by the aforementioned reading means, and said collating means It is characterized by having an unlocking signal output means to output the signal which unlocks said lock means.

[0006] Invention according to claim 2 is characterized by embedding said transponder component to the key inserted in a keyhole in the locking equipment of the pachinko game base of the claim 1

above-mentioned publication.

[0007] Invention according to claim 3 is characterized by connecting said transponder component with the key inserted in a keyhole in the locking equipment of the pachinko game base of the claim 1 above-mentioned publication.

[0008] In the locking equipment of the pachinko game base of the claim 1 above-mentioned publication, invention according to claim 4 is characterized by having two or more lock means to lock electrically two or more closing motion sections concerned, respectively, and a selection means to choose the lock means set as the object of unlocking out of two or more lock means concerned, when a pachinko game base has two or more closing motion sections.

[0009] Invention according to claim 5 is characterized by said two or more lock means being a 1st lock means to lock electrically the face of a board of a pachinko game base, and a 2nd lock means to lock the frame surface of a pachinko game base electrically in the locking equipment of the pachinko game base of the claim 4 above-mentioned publication.

[0010] Invention according to claim 6 is embedded to the key by which said transponder component is inserted in a keyhole in the locking equipment of the pachinko game base of the claim 5 above-mentioned publication, and it is characterized by said selection means choosing said 1st lock means or said 2nd lock means according to the direction to which the key inserted in the keyhole was turned, respectively.

[0011] Invention according to claim 7 is connected with the key by which said transponder component is inserted in a keyhole in the locking equipment of the pachinko game base of the claim 5 above-mentioned publication, and it is characterized by said selection means choosing said 1st lock means or said 2nd lock means according to the direction to which the key inserted in the keyhole was turned, respectively.

[0012] As for the aforementioned reading means, invention according to claim 8 is equipped with the antenna in the locking equipment of above-mentioned claims 2, 3, and 6 or a pachinko game base given in seven, and it is characterized by forming the antenna concerned in the perimeter of said keyhole at it and one.

[0013] As for the aforementioned reading means, invention according to claim 9 is equipped with the antenna in the locking equipment of above-mentioned claims 2, 3, and 6 or a pachinko game base given in seven, and it is characterized by installing the antenna concerned in said transponder component and the location which can be accessed in the condition that said key was inserted in said keyhole.

[0014]

[Function] Thus, if it is in constituted invention according to claim 1, the transponder component has memorized the ID code to the internal memory, a reading means is accessed with the transponder component, and the ID code memorized by the transponder component is read. The read ID code is collated with the ID code for collating by the collating means. If the ID code read as a result of this collating is in agreement with the ID code for collating, a unlocking signal will be outputted to a lock means from a unlocking signal output means, and a lock means will unlock the closing motion section of a pachinko game base electrically. This becomes possible to open the closing motion section of a pachinko game base.

[0015] If it was in invention according to claim 2, since it embedded in the operation of invention of the claim 1 above-mentioned publication to the key in which a transponder component is inserted by the keyhole, while carrying is possible with a key, concomitant use with the electric lock device using a transponder component, and a key and the conventional mechanical lock device by the keyhole is attained.

[0016] If it was in invention according to claim 3, since it connected with the key in which a transponder component is inserted by the keyhole in the operation of invention of the claim 1 above-mentioned publication, while being able to do carrying together with a key, concomitant use with the electric lock device using a transponder component, and a key and the conventional mechanical lock device by the keyhole is attained.

[0017] If it is in invention according to claim 4, when two or more closing motion sections are in a pachinko game base in an operation of invention of the claim 1 above-mentioned publication, the closing motion section of these plurality is electrically locked by lock means to correspond, and a

selection means chooses the lock means set as the object of unlocking out of two or more lock means. The unlocking signal from a unlocking signal output means is outputted to the lock means chosen by the selection means.

[0018] If it is in invention according to claim 5, it sets to an operation of invention of the claim 4 above-mentioned publication. Two or more lock means consist of two lock means, the 1st lock means and the 2nd lock means. When the 1st lock means is chosen and a unlocking signal is inputted into this from a unlocking signal output means by the selection means, it unlocks electrically the lock of the face of a board of a pachinko game base. When the 2nd lock means is chosen and a unlocking signal is inputted into this from a unlocking signal output means by the selection means, it unlocks the lock of the frame surface of a pachinko game base electrically.

[0019] If it was in invention according to claim 6, since it embedded in the operation of invention of the claim 5 above-mentioned publication to the key in which a transponder component is inserted by the keyhole, while carrying is possible with a key, concomitant use with the electric lock device using a transponder component, and a key and the conventional mechanical lock device by the keyhole is attained. A selection means chooses the 1st lock means or the 2nd lock means according to the direction to which the key inserted in the keyhole was turned, respectively in that case.

[0020] If it was in invention according to claim 7, since it connected with the key in which a transponder component is inserted by the keyhole in the operation of invention of the claim 5 above-mentioned publication, while being able to do carrying together with a key, concomitant use with the electric lock device using a transponder component, and a key and the conventional mechanical lock device by the keyhole is attained. A selection means chooses the 1st lock means or the 2nd lock means according to the direction to which the key inserted in the keyhole was turned, respectively in that case.

[0021] If it was in invention according to claim 8, since the antenna which constitutes a reading means was formed in the perimeter of a keyhole at it and one in the operation of invention above-mentioned claims 2, 3, and 6 or given in seven, the ID code memorized by the transponder component only by inserting a key in a keyhole is read by the reading means.

[0022] If it was in invention according to claim 9, since the antenna which constitutes a reading means was installed in the transponder component and the location where it can access in the condition of having been inserted in the key by the keyhole, in the operation of invention above-mentioned claims 2 and 3 or given in seven, the ID code memorized by the transponder component only by inserting a key in a keyhole is read by the reading means.

[0023]

[Example] Hereafter, the example of this invention is explained based on a drawing. Drawing 1 is the outline front view of the pachinko base by one example of this invention. In addition, the same sign is given to the part which is common in drawing 5. In this example, it has composition which added the electric keying system using a transponder component to the locking equipment which used the keyhole 1 in the conventional pachinko base. That is, if it has a keyhole 1 in a suitable location, and a key is inserted in this keyhole 1, for example, it turns to the right, the face of a board (glass side) 2 will open, if it turns to the left, a frame surface (whole game base surface) 3 will open, but in that case, the respectively electric lock device is prepared in the face of a board 2 and a frame surface 3, and this pachinko base is constituted so that the ID code of a transponder component may unlock these electric lock device, so that it may mention later. In this case, although the antenna for reading the ID code of a transponder component is needed as what constitutes an electric keying system, this antenna 5 is formed in the perimeter of a keyhole 1 here at this and one. As long as the antenna 5 and keyhole 1 unified section is the user-friendly location of a pachinko base, it may be installed anywhere.

[0024] Being able to transmit [ a transponder component ] and receive data in response to the energy from an external magnetic field as everyone knows without having a power source oneself (dc-battery loess), it consists of a coil (antenna) and an IC. IC consists of a functional unit of memory, a control section, a non-contact interface, etc. further. Memory consists of EEPROMs which are rewritable nonvolatile memory electrically for example, in the contents of storage. The ID code for pachinko base unlocking (for example, 48 bits) is beforehand memorized by this memory. Thus, the constituted transponder component will start, if the field energy (for example, 125kHz) from the

outside is received through a coil, and it has the function to transmit the data of the ID code memorized by memory to the exterior. The distance of a transponder component which can be communicated is max, for example, is usually 3-5cm.

[0025] Drawing 2 is drawing showing how to use a transponder component. When incorporating the transponder component 6 to the keying system of a pachinko base, there is two usage by the method of wearing over a key 7. That is, as shown in drawing 2 (A), it is with the case (key grip type) where it uses embedding transponder component 6a of a stick type in the grip section 8 of a key 7, and the case (key case type) where it uses for a key 7, carrying out transponder component 6b of a coin mold like a key case, and hanging by the connection member 9 as shown in drawing 2 (B). The method of actuation etc. differs from the installation of a desirable antenna a little by whether how to use which is adopted. By this example, since the perimeter of a keyhole 1 is equipped with the antenna 5 (refer to drawing 1), taking the case of the thing of the key grip type shown in drawing 2 (A), it explains here as what suits more in this case. When an antenna 5 is formed in a keyhole 1 and one, the transponder component 6 in a key 7 will come only by inserting a key 7 in a keyhole 1 in the field in which the communication link with an antenna 5 is possible.

[0026] Drawing 3 is the block diagram showing the configuration of the electric keying system of the pachinko base in this example. The key 7 (key grip type) where this electric keying system embedded the transponder component 6, The antenna 5 as a reading means for reading the ID code of the transponder component 6, The transceiver circuit 10 which transmits and receives data while supplying magnetic energy to the transponder component 6 through an antenna 5, The key plug pilot switch 11 as a selection means which detects to which direction the key 7 was inserted in the keyhole 1 and it was turned, It consists of a face-of-a-board electronic lock device 12 as a 1st lock means to lock electrically the face of a board (glass side) 2 of a pachinko base, a frame surface electronic lock device 13 as a 2nd lock means to lock electrically the frame surface (whole game base surface) 3 of a pachinko base, and an external power 14. The interior of a keyhole 1 is equipped with the key plug pilot switch 11. moreover, each electronic lock devices 12 and 13 -- electromagnetism -- a solenoid - - having -- \*\*\*\* -- an electric signal -- electromagnetism -- by exciting a solenoid, it is constituted so that a lock condition may be canceled. An external power is home AC100V usual power source.

[0027] CPU15 which functions as a collating means for the transceiver circuit 10 to collate an ID code and to control each part, and a discharge signal output means, EEPROM16 which memorizes the ID code for collating (for example, 48 bits) set up beforehand, It consists of a sending circuit 17 which drives an antenna 5, receiving circuits (magnification, plastic surgery, etc.) 18 which process the signal received with the antenna 5, and a power circuit 19 which changes the input voltage from an external power 14, and is sent to each part. The key plug pilot switch 11 is connected to the input port of CPU15, and the face-of-a-board electronic lock device 12 (electromagnetism solenoid) and the frame surface electronic lock device 13 (electromagnetism solenoid) are connected to the output port of CPU15, respectively. With the signal from the key plug pilot switch 11, CPU15 makes the face of a board 2 applicable to unlocking, when the key 7 inserted in the keyhole 1 is turned to the right, and when turned to the left, it is constituted so that it may be recognized as that which makes a frame surface 3 applicable to unlocking.

[0028] Drawing 4 is a flow chart which shows actuation of the pachinko base keying system constituted as mentioned above. If a key 7 is inserted in a keyhole 1 and turned to one of on either side, CPU15 will judge to which [ on either side ] the key 7 inserted in the keyhole 1 was turned by the signal from the key plug pilot switch 11 (step S1).

[0029] When a key 7 is turned to the right as a result of decision of step S1, CPU15 is recognized to be that from which the face of a board (glass side) 2 is set as the object of unlocking (step S2), a field (for example, 125kHz) is generated from an antenna 5 through a sending circuit 17 (step S3), and a key ID code is read from the transponder component 6 installed into the key 7 (step S4). That is, if a field (125kHz) occurs from an antenna 5, in response to the energy of the field, the transponder component 6 in a key 7 will start, and the data of the key ID code memorized by memory will be transmitted to the exterior through a coil. After being received by the antenna 5 and changing the data of this key ID code into an electrical signal, they are sent to CPU15 through processing of magnification of that input signal, plastic surgery, etc. in a receiving circuit 18.

[0030] If a key ID code is read by CPU15 by step S4, it will judge whether CPU15 reads the ID code

for collating from EEPROM16, and analyzes an ID code, and its key ID code of the transponder component 6 corresponds with the ID code for collating (step S5). the electromagnetism which constitutes it for the signal which unlocks the face-of-a-board electronic lock device 12 if an ID code is in agreement as a result of this decision -- it outputs to a solenoid and the face-of-a-board electronic lock device 12 is made to unlock (step S6) This becomes possible to open the face of a board 2. On the other hand, if an ID code is not in agreement as a result of decision of step S5, processing is ended and the lock condition of the face of a board 2 is maintained as it is.

[0031] When a key 7 is turned to the left as a result of decision of step S1 CPU15 is recognized to be that from which the frame surface (whole game base surface) 3 is set as the object of unlocking (step S7). Like the above, a field (125kHz) is generated from an antenna 5 through a sending circuit 17 (step S8), and a key ID code is read from the transponder component 6 installed into the key 7 (step S9). It collates with the ID code for collating which the read key ID code is CPU15, and is memorized by EEPROM16, and it is judged whether these ID codes are in agreement (step S10). the electromagnetism which constitutes it for the signal which unlocks the frame surface electronic lock device 13 if an ID code is in agreement as a result of this decision -- it outputs to a solenoid and the frame surface electronic lock device 13 is made to unlock (step S11) This becomes possible to open a frame surface 3. On the other hand, if an ID code is not in agreement as a result of decision of step S10, processing is ended and the lock condition of a frame surface 3 is maintained as it is.

[0032] Next, the 2nd example is explained. This example unlocks a pachinko base electrically using the key with a transponder component of the key case type shown in drawing 2 (B), and the antenna is preferably installed in the location in which transponder component 6b of a coin mold and a communication link are possible. For example, when a key 7 is inserted in a keyhole 1, an antenna is installed in the front of the location where transponder component 6b of a coin mold hung and fell. In this case, it means that the antenna was formed in somewhere else [ a keyhole 1 ] unlike the 1st above-mentioned example. In addition, when the die length of the connection member 9 is short, an antenna and a keyhole 1 may be formed in one like the 1st example. Since it is the same as that of the 1st example, other configurations (refer to drawing 3 ) and actuation (operating instructions are included.) (refer to drawing 4 ) omit the explanation.

[0033] Next, the 3rd example is explained. In this example, unlike the 1st above-mentioned example and the 2nd example, a keyhole 1 is abolished and only the antenna 5 is formed in a pachinko base. Since a key becomes unnecessary by abolition of a keyhole, a transponder component is held in a suitable case convenient for carrying or management, or is fabricated by such suitable configuration. Since the configuration of the keying system using this transponder component is almost the same as the configuration shown in drawing 3 , that explanation is omitted. However, when it detects that the key 7 was inserted in the keyhole 1 and turned to one of on either side by the key plug pilot switch 11, he energizes at an antenna 5 and is trying to generate a field in the 1st example and the 2nd example, but in this example, since there is no keyhole 1, the switch for forming the timing energized at an antenna 5 as what is replaced with the key plug pilot switch 11 etc. is needed. the electromagnetism corresponding to the switch chosen when in agreement [ each hiding switch the object for the face of a board 2 and for frame surface 3 was specifically formed, after pushing one of hiding switches to unlock, when the transponder component was brought close to an antenna, the ID code was read in the transponder component, and ] with the ID code for collating -- the lock of the face of a board 2 or a frame surface 3 is canceled by the solenoid. In addition, it replaces with each hiding switch the object for the face of a board 2, and for frame surface 3, and you may make it form the hiding switch for choosing for [ for energizing at an antenna 5 / a common hiding switch and for unlocking ].

[0034] Therefore, since according to each above-mentioned example the lock was electrically canceled when an ID code was collated using the transponder component 6 and an ID code was in agreement, unless an ID code is known, it becomes almost impossible to open a pachinko base unjustly, and the safety of a pachinko base improves only compared with unlocking by the key. Especially, in the 1st example and the 2nd example, since it is impossible to open a pachinko base unless an ID code (electric signal) is further in agreement even if it uses the copy of a key, the safety of a pachinko base will improve extremely.

[0035] In addition, although the ID code has become [ being beforehand set up with as, and ] in each



above-mentioned example, it is not necessarily limited to this. For example, whenever it communicates and collates an ID code, a new ID code is created with a random number by CPU15 each time, and the data of the memory (EEPROM) of the transponder component 6 and the data of EEPROM16 in the transceiver circuit 10 are rewritten to the new ID code, and you may make it register them as a rolling ID code. By using the rolling ID code rewritten each time, the malfeasance to a pachinko base can be prevented further more much more effectively.

[0036] Moreover, although an ID code will be automatically read in the transponder component 6 in the 1st above-mentioned example and the 2nd above-mentioned example if a key 7 is inserted and turned to a keyhole 1, it is not necessarily limited to this. For example, the antenna and the keyhole are established in the separate location, and after bringing a transponder component close to the location of an antenna and collating an ID code, a key is inserted in a keyhole and you may make it unlock a lock. In this case, the hiding switch for forming the timing energized at an antenna like the 3rd example, and choosing the candidate for unlocking again etc. is needed.

[0037] Moreover, although each above-mentioned example explained the keying system of this invention taking the case of the case where it applies to a pachinko base, if it is a game base with the closing motion section, it is natural [ this invention ] for it to be able to apply to anythings.

[0038]

[Effect of the Invention] Since the closing motion section of a pachinko game base is unlocked by collating of an ID code using a transponder component according to invention according to claim 1 as stated above, unless an ID code is in agreement, it becomes impossible to open a pachinko base, and the safety of a pachinko game base improves.

[0039] Since it embedded [ according to invention according to claim 2 ] to the key in which a transponder component is inserted by the keyhole in addition to the effect of the invention of the claim 1 above-mentioned publication, convenience and safety improve according to concomitant use with a key.

[0040] Since it connected [ according to invention according to claim 3 ] with the key in which a transponder component is inserted by the keyhole in addition to the effect of the invention of the claim 1 above-mentioned publication, convenience and safety improve according to concomitant use with a key.

[0041] According to invention according to claim 4, in the effect of the invention of the claim 1 above-mentioned publication, also when two or more closing motion sections are in a pachinko game base, it can respond by the same system.

[0042] According to invention according to claim 5, in the effect of the invention of the claim 4 above-mentioned publication, it is prevented effectively that the face of a board and the frame surface of a pachinko game base can open unjustly.

[0043] Since the candidate for unlocking is chosen [ according to invention according to claim 6 ] according to the direction to which the key inserted in the keyhole was turned in addition to the effect of the invention of the claim 5 above-mentioned publication, simplification of actuation is attained that what is necessary is just to insert a key in a keyhole and to only turn it on the occasion of unlocking of a desired part.

[0044] Since the candidate for unlocking is chosen [ according to invention according to claim 7 ] according to the direction to which the key inserted in the keyhole was turned in addition to the effect of the invention of the claim 5 above-mentioned publication, simplification of actuation is attained that what is necessary is just to insert a key in a keyhole and to only turn it on the occasion of unlocking of a desired part.

[0045] According to invention according to claim 8, since the antenna was formed in a keyhole and one in addition to the effect of the invention above-mentioned claims 2, 3, and 6 or given in seven, the read of the ID code of a transponder component becomes possible only by inserting a key in a keyhole, and simplification of actuation is attained.

[0046] Since it installed in the transponder component and the location which can be accessed in addition to the effect of the invention above-mentioned claims 2 and 3 or given in seven after the antenna had been inserted in the key by the keyhole if it was in invention according to claim 9, the read of the ID code of a transponder component becomes possible only by inserting a key in a keyhole, and simplification of actuation is attained.



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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] The outline front view of the pachinko base by one example of this invention

[Drawing 2] Drawing showing how to use a transponder component

[Drawing 3] The block diagram showing the configuration of the electric keying system of the pachinko base in the 1st example

[Drawing 4] The flow chart which shows actuation of the pachinko base keying system of drawing 3

[Drawing 5] The outline front view showing an example of the conventional pachinko base

[Description of Notations]

- 1 -- Keyhole
- 2 -- Face of a board
- 3 -- Frame surface
- 5 -- Antenna (reading means)
- 6 -- Transponder component
- 7 -- Key
- 10 -- Transceiver circuit
- 11 -- Key plug pilot switch (selection means)
- 12 -- Face-of-a-board electronic lock device (the 1st lock means)
- 13 -- Frame surface electronic lock device (the 2nd lock means)
- 15 -- CPU (a collating means, unlocking signal output means)
- 16 -- EEPROM
- 17 -- Sending circuit
- 18 -- Receiving circuit

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[Translation done.]

\* NOTICES \*

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1. This document has been translated by computer. So the translation may not reflect the original precisely.

2. \*\*\*\* shows the word which can not be translated.

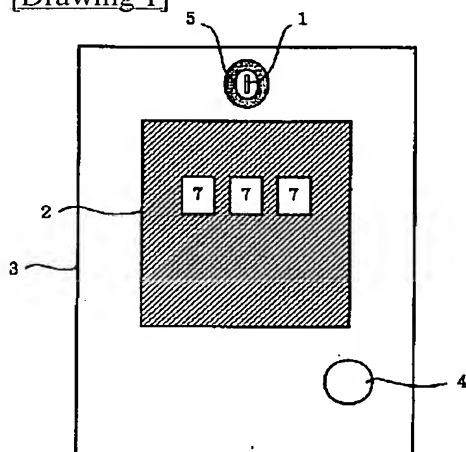
3. In the drawings, any words are not translated.

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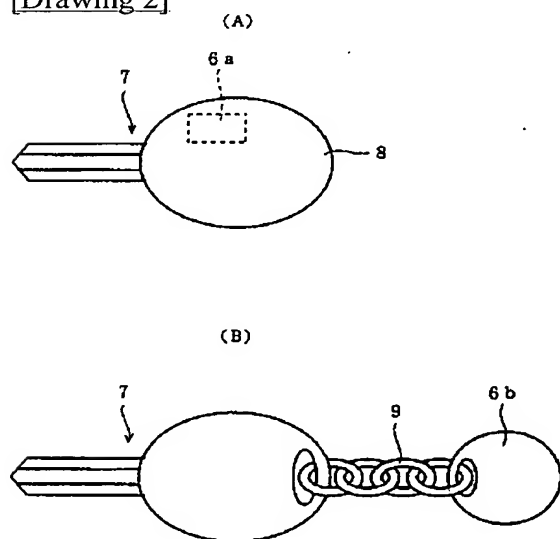
DRAWINGS

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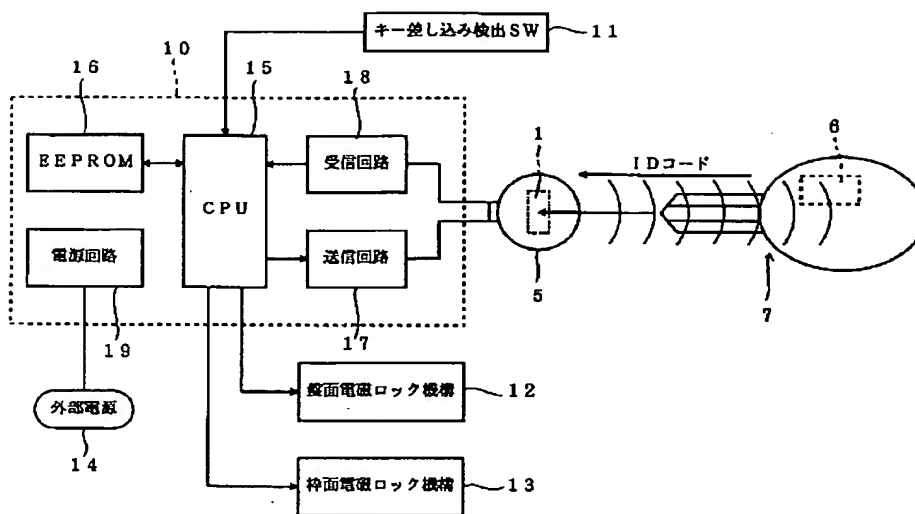
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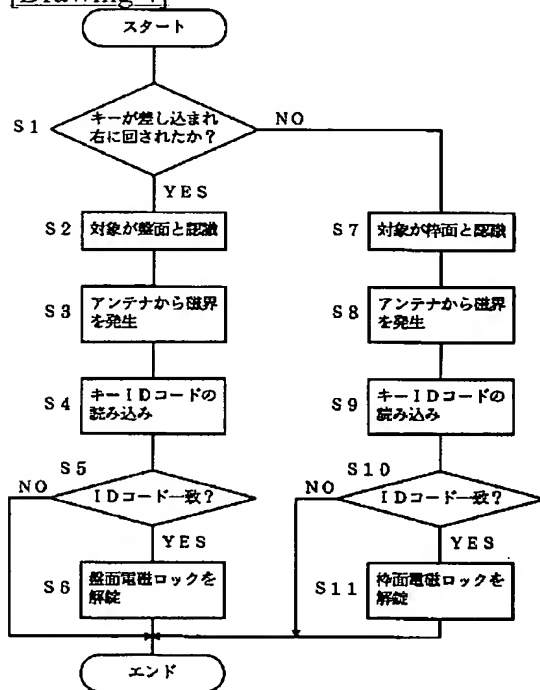
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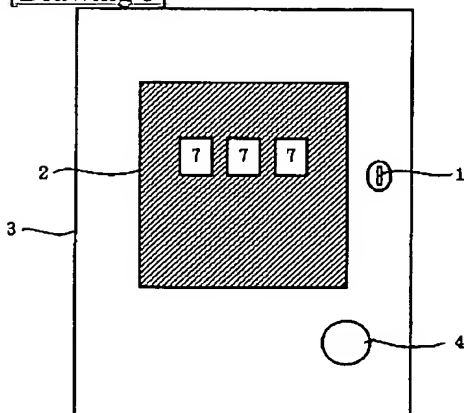
[Drawing 3]



[Drawing 4]



[Drawing 5]



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[Translation done.]

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⑭ 発明の名称 盗難防止装置

⑰ 特 願 昭62-210552

⑱ 出 願 昭62(1987)8月25日

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明 細 書

1. 発明の名称

盗難防止装置

2. 特許請求の範囲

(1) コード信号をスイッチ操作により送信する送信器と、前記信号を受信すると共に前記コードの照合結果により特定の機器を作動可能にする受信器とを具備する盗難防止装置であって、

前記送信器と前記受信器との間で電氣的接触を行うことをもって前記受信器側電源により前記送信器側電源を充電する充電手段を有し、

前記送信器側電源の充電時には、前記スイッチ操作による前記信号の送信が禁止されることを特徴とする盗難防止装置。

(2) 前記送信器が、前記受信器との電氣的接触に連動して前記信号を送信することを特徴とする特許請求の範囲第1項に記載の盗難防止装置。

(3) 前記特定の機器が車載機器からなり、

前記送信器が車輛エンジンを始動するためのキーに一体的に設けられ、

前記電氣的接触が前記車輛のキースwitchにより前記キーを差込むことにより行われるものであることを特徴とする特許請求の範囲第1項若しくは第2項に記載の盗難防止装置。

3. 発明の詳細な説明

〈産業上の利用分野〉

本発明は、機器の盗難防止装置に関し、特に送信器から送信されたコード信号を受信器にて受信すると共にコードの照合結果により特定の機器を作動可能にする盗難防止装置に関する。

〈従来の技術〉

従来、特定の機器、例えば車載機器或いは車輛本体の盗難を防止するために、運転者が携帯する側送信器と車輛側受信器とからなる盗難防止装置が提案されている。しかるに、このような装置にあっては特に送信器の電源が比較的早期に消耗し作動不能となることがあった。

そこで、特開昭62-1659号公報には、携帯器の一部がメカニカルキーの形状をなし、車輛のイグニッションキースwitchにこのキーを差込

むことにより携帯器の電源を充電する構造が開示されている。しかるに、送信器側電源を充電中に送信器と受信器との間で連続的に信号の授受が行われると送信器側電源の充電が充分に行われないことが考えられる。

〈発明が解決しようとする問題点〉

このような従来技術の問題点に鑑み、本発明の主な目的は、送信器側電源の充電が確実に行われ、常に良好に作動する盗難防止装置を提供することにある。

〈問題点を解決するための手段〉

このような目的は、本発明によれば、コード信号をスイッチ操作により送信する送信器と、前記信号を受信すると共に前記コードの照合結果により特定の機器を作動可能にする受信器とを具備する盗難防止装置であって、前記送信器と前記受信器との間で電氣的接触を行うことをもって前記受信器側電源により前記送信器側電源を充電する充電手段を有し、前記送信器側電源の充電時には、前記スイッチ操作による前記信号の送信が禁止さ

れることを特徴とする盗難防止装置を提供することにより達成される。

〈作用〉

このようにすれば、送信器側電源が確実に充電される。

〈実施例〉

以下に添付の図面を参照して本発明を特定の実施例について詳細に説明する。

第1図及び第2図は本発明に基づく盗難防止装置が適応された車輛盗難防止装置を示す。この装置は、車輛1側のステアリングコラム等に設けられたステアリングロックを兼用するキースイッチユニット2と、車輛1のドアの把手部分に設けられたドアキースイッチ3と、ドアロックの施錠、解錠及びエンジンの始動を制御する制御装置4と、ドアキースイッチ3に作用しドアロックを施錠解錠すると共にキースイッチユニット2に設けられたイグニッションキースイッチ2aに差込みエンジンを始動可能とするためのキー装置5とからなる。

キー装置5は、キー本体6と把持部7とからなり、把持部7は、その内部に送信器8を内蔵している。把持部7の表面部分には押釦スイッチ9が設けられている。そして把持部7内のキー本体6の基端部を挟んで対峙する部分には、LED素子からなる発光素子10が、その光軸を概ねキー本体6の先端方向に向けて1対設けられている。また、キー本体6の基端部近傍の端縁部には、1対のコンタクト11が設けられている。

第1図に示すように、車輛1のドアキースイッチ3は、公知のシリンダ錠式であり、キーシリンダにキー本体6を挿入しキー装置5を回動することにより、または後記する遠隔操作により、ドアが施錠または解錠されるようになっている。キーシリンダの近傍にはフォトリランジスタからなる受光素子12が設けられている。この受光素子12は、制御装置4に接続されている。また、制御装置4は車載バッテリー41から電源を供給されている。

第2図に示すように、キースイッチユニット2

に設けられたイグニッションキースイッチ2aは、キー本体6を挿入し得るようにされると共に、その内部にキー装置5の回動位置に応じて閉成する機械的な接点と、前記したコンタクト11に接触可能な一対の対応コンタクト14とが設けられている。また、キースイッチユニット2に於て、イグニッションキースイッチ2aに挿入されたキー装置5の一方の発光素子10に対向する位置にはフォトリランジスタからなる受光素子15が設けられている。対応コンタクト14及び受光素子15は制御装置4に接続されている。

第3図は、本発明に基づく車輛盗難防止装置の構成を図式的に示すブロック図である。

キー装置5の把持部7に設けられた発光素子10は、送信器8内の発光回路18に接続され、発光回路18は車輛別に設定された固有コードを記憶するCPU19に接続されている。CPU19は、押釦スイッチ9を介して第1スイッチ回路20に接続されている。第1スイッチ回路20は、充電可能なバッテリー22に接続されている。また、



第1スイッチ回路20は、コンタクト11に接続するダイオードブリッジ回路からなるコンタクト回路23にも接続されている。この第1スイッチ回路20は、コンタクト11が対応コンタクト14に接触していないときのみオンとなり、押釦スイッチ9の操作が可能となるように設定されている。

一方、CPU19は、第2スイッチ回路21にも接続され、第2スイッチ回路21は、コンタクト回路23に接続されている。この第2スイッチ回路21は、第1スイッチ回路20と連動しており、両コンタクト11及び14が互いに接触しているときのみオンとなると共に押釦スイッチ9の操作と無関係にCPU19に所定のトリガ信号を入力し得るように設定されている。

ここで、CPU19、発光回路18及び発光素子10は、両コンタクト11及び14の接触時には、第1スイッチ回路20を介してバッテリー22から電源が供給され、両コンタクトの非接触時には、第2スイッチ回路21、コンタクト回路23、

両コンタクト11及び14を介して車載バッテリー41から電源が供給されるようになっている。またバッテリー22は、コンタクト回路23に接続されており、両コンタクト11及び14を介して車載バッテリー41により充電されるようになっている。

車輛1側の制御装置4の内部には、ドアキースイッチ3の受光素子12及びイグニッションキースイッチ2aの受光素子15に接続された受光回路25が設けられ、受光回路25は、前記した車輛別の固有コードと同一のコードを記憶するCPU26に接続されている。CPU26は、ドアロック出力回路28及びリレー制御出力回路30にも接続されている。ドアロック出力回路28は、ドアを施錠または解錠するドアロック装置36に接続されている。また、リレー制御出力回路30は、エンジンの点火装置及び燃料噴射装置を駆動制御するべく両装置に接続されたエンジン制御装置37に車載バッテリー41から電源を供給するためのメインリレー42と、スタータモータ43を

駆動するためのスタータリレー44とに、両リレーをオンオフするべく接続されている。

尚、制御装置3内の充電制御回路45は、イグニッションキースイッチ2a内の対応コンタクト14に接続されている。

イグニッションキースイッチ2aは「LOCK」、「ACC」、「ON」、「ST」の各位置に設定し得るようになっており、該スイッチが「ON」位置に設定された場合、メインリレー42に車載バッテリー41から電源が供給されるようになっている。また、イグニッションキースイッチ2aが「ON」位置を経て「ST」位置に設定された場合、メインリレー42及びスタータリレー44に電源が供給されるようになっている。

次に上記した盗難防止装置の作用を詳細に説明する。

ドアキースイッチ3にキー装置5を向けて押釦スイッチ9を押すと、第1スイッチ回路20がオンとなっているため、CPU19にトリガ信号が入力され、CPU19が固有のコード信号を発生

し、発光回路18、発光素子10を介して受光素子12に向けて赤外線のコッド信号を送信する。

受光素子12がコード信号を受信すると、制御装置4内にて受光回路25を介してCPU26にコード信号が入力され、CPU26に於て固有コードの照合が行われる。固有コードが適合することが確認された場合、ドアロック出力回路28を介してドアロック装置36が駆動され、ドアロックを施錠または解錠する。

キー装置5のキー本体6をイグニッションキースイッチ2aに挿入すると、コンタクト11が対応コンタクト14に接触し、前記したように第1スイッチ回路20がオフとなり、第2スイッチ回路21がオンとなる。そして、第2スイッチ回路21から所定のトリガ信号がCPU19に入力され、CPU19が固有のコード信号を発生し、発光回路18、発光素子10を介して受光素子15に向けてコード信号を送信する。

一方、両コンタクト11及び14が互いに接触している間、車載バッテリー41により、充電制御

回路45、両コンタクト14、11、コンタクト回路23を介してバッテリー22が良好に充電される。

ここで、CPU19は両コンタクト接触中、第2スイッチ回路21からのトリガ信号により所定の回数だけコード信号を送信した後は、キー本体6をイグニッションキースイッチ2aから抜き取り再び挿入するまでコード信号の送信を停止するように設定されている。また、前記したように両コンタクト接触中は第1スイッチ回路20がオフとなり第2スイッチ回路21がオンとなるため、押釦スイッチ9の操作が不可能になると共にこの間の送信器8側への電源供給は車載バッテリー41から行われることとなる。そのため、充電中にバッテリー22が消耗することがない。

受光素子15がコード信号を受信すると、受光回路25を介してCPU26にコード信号が入力され、固有コードの照合が行われる。固有コードが適合することが確認された場合、リレー出力回路30を介してメインリレー42及びスタータリ

レー44がオンされる。そして、キー装置5を回動し、イグニッションキースイッチ2aを「ON」位置を経て「ST」位置に設定すると、エンジン制御装置37がエンジンの点火装置及び燃料噴射装置を駆動制御し、マグネットスイッチ46を介してスタータモータが駆動され、エンジンが始動する。

CPU26に於て固有コードの適合が確認されなかった場合、即ち固有コードと異なるコードが入力されるか或いはコードがキー装置5から入力されなかった場合、メインリレー42及びスタータリレー44がオンされないため、エンジンの始動が不可能となる。

このようにして、前記した固有コードの照合を行わずに車輛1を駆動せんとした場合、エンジンを始動することができず、好適に盗難が防止される。

〈発明の効果〉

このように本発明によれば、送信器側電源が無駄に消耗することなく確実に充電され、常に送信

器が良好に作動するようになるため、その効果は極めて大である。

#### 4. 図面の簡単な説明

第1図は本発明に基づく盗難防止装置のキー装置とドアキースイッチとを示す模式的な構成図である。

第2図は本発明に基づく盗難防止装置のキー装置がイグニッションキースイッチに差込まれた状態を示す模式的な構成図である。

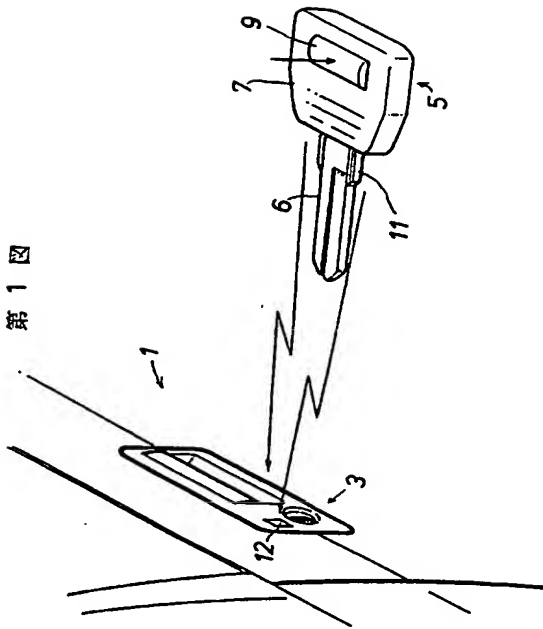
第3図は本発明に基づく盗難防止装置の構成を示すブロック図である。

- |                  |              |
|------------------|--------------|
| 1…車輛             | 2…キースイッチユニット |
| 2a…イグニッションキースイッチ |              |
| 3…ドアキースイッチ       | 4…制御装置       |
| 5…キー装置           | 6…キー本体       |
| 7…把持部            | 8…送信器        |
| 9…押釦スイッチ         | 10…発光素子      |
| 11…コンタクト         | 12…受光素子      |
| 14…対応コンタクト       | 15…受光素子      |
| 18…発光回路          | 19…CPU       |

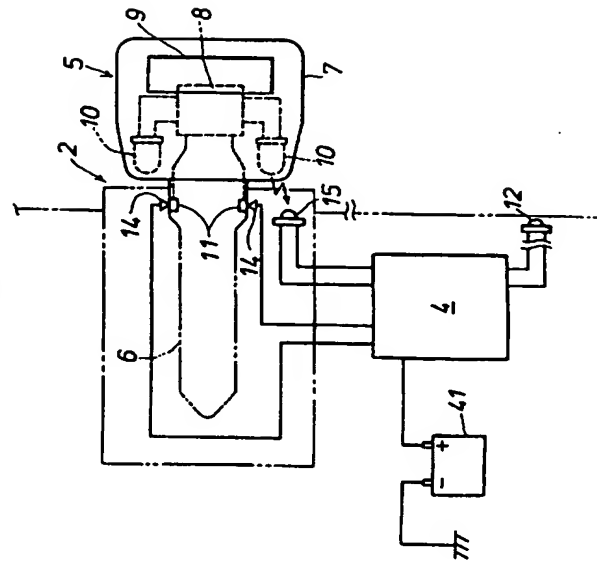
- |              |              |
|--------------|--------------|
| 20…第1スイッチ回路  |              |
| 21…第2スイッチ回路  |              |
| 22…バッテリー     | 23…コンタクト回路   |
| 25…受光回路      | 26…CPU       |
| 28…ドアロック出力回路 |              |
| 30…リレー制御出力回路 |              |
| 36…ドアロック装置   | 37…エンジン制御装置  |
| 41…車載バッテリー   | 42…メインリレー    |
| 43…スタータモータ   | 44…スタータリレー   |
| 45…充電制御回路    | 46…マグネットスイッチ |

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第1図



第2図



第3図

